

Title: GENE PROMOTERS
ISOLATED FROM POTATO AND
USE THEREOF

Inventor(s): Ziyu Dai, et al.
DOCKET NO.: 059440-0141

Figure 1

Isoform I of Pin1 Gene Promoter

CTAATACGAGTCTACATATAGGGCAGGGTGGCTCGAGGCGCGCTTCCTATCTTTG
TTTGAAAAAATTGGAAAAGAACGTAGGACCACATGGACCTTGGGTGCAACAATAT
TGTTGTCTCTCAAATGTGGTACAAGGATTGTTACATCCTCCGGGTACTTTAAGTT
GACCAGGGCATTACCATTTTATATTTGCCGTGCATTGAATTGTGTGGCATTTCCC
TCCACTTGGAATTAGTCGGGGCGAAAGTCATCGGTATATTAAATCCATCAACTAAA
GAAATGTCCCAGAAATCTAAGTTGTTGAACTGGTCCAAGGCGTACTCGGCTAGGG
TGTTTGGTGGTTTGCCCCACCCGGTGCACTGCAGGACACCACCACAATCACCAGT
CATGCACGAACCTCTACCAGCACCATCGAAGTTACATCCAGTACGACCCCATATA
CCTGCCATCGTAGTGCCCCTAGGCGCATCAATGACCCACATTGGCCCCGATCGA
AACGTCGGCACC CGCTTTCGGGGTCGATGCGCCCAAACCTTTGTTG
TTGCGTACCTCGATAGTGGCAGCATAAGTGAAAGTCACAAAAGCAAGAAGGGAGA
AAACAAAAGAAGATCTCAAGTAGCCCATGTTTGTGAAATTTATATGTGGACAAA
TTATTTTGGTACTTTATATATAGGGATATGGCGGCTTTTGGCACTACGGATATT
AATCGTATTATATAGCAATATCATACTTTGACTAATTATAAACGAAATATATTAC
AATATGATTTGGTAAACGTTGAGGTGGAAAAATGTATAAGAGCCGCCTAATAATT
AATTATTTTATGAATATAGCCTATAGTTACAAGTTAACTTTATTTGGTGATAACT
TTGACATATAAACTCTGTAACGTGACGGAATTTTCTTAAACTAAATATTAAAA
AGCAGCTATTTTCAGATTTTTCGTGGCCAAAGTTTCTTGCACTACTTATCTATGCC
CATTTTACTTTTATCGTTCTAGCCTTCTAGGTACACGTTTGAACATAAAAAATC
ATAAAAATTGAAAGTAAAAATTAGTTTTTTTTTTTTCATATTACTCGTAGGGATCA
TTTGTTAGATCAATCTGAAATATACAAACCATTCTGATTTTAAAATCACAACCAT
TCTGCCAAGGGGAAGTCTATGTGATCCGTGACAAGTGGTTTGATTATTCTTAGTC
TAGATTGGAGTCACACTTTTAGTGCAAATATCTATTAAAAGAACCCCTATTGAT
GCAAATATCTATTAAAAGAACCCCTATTCATGCTTTATTTATTTTACGATCGGA
GCATGGATATATTTACTAATTAAAATAAATTGGAAGGAATTGATCGACAAGTCAT
CAAGCTTATCGTCGATCCACATTAAAATAACGTTAGTATGGCTGCTTTTAGAGAA
ACAAGTGGATCATGTATAATTTAGTTTTAAAATATCTCCTATAAAATATCTATATA
TACCTCTAAACTAAATGCATCTAACAACACAAATATAAACTTAGATTCTTTAAA
GAAATTGCAGAATTAAATCGAGGGCAAATAAGTCTATGGTGAAGTTGGTTGCTTTC

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Figure 2

Isoform II of Pin1 Gene Promoter

CTATATACGATCTCAGTATACGCGACGCGCTGGTGGTGGGCGGGGCGGGGCGGGGATCTTTG
TTTGAAAAAATTGGAAAAGAACGTAGGACCACATGGACCTTGGGTGCAACAATAT
TGTTGTCCTCCAAATGTGGTACAAGGATTGTTACATCCTCCGGGTACTTTAAGCT
GACTAGGACATTCACCATTATATTTGCCGTGCATTGAATTGTGTGGCATTTCCTC
TCCACTTGGATTAGTCGGGGCGAAAGTCATCGGTATATTAAATCCATCAACTAAA
GAAATGTCCCAGAAATCTAAGTTGTTGAACTGGTCCAAGGCGTACTCGGCTAGGG
TGTTTGGTGGTTTGCCCCACCCGGTGCACTGCAGGACACCACCACAATCACCAGT
CATGCACGAACCTCTACCAGCACCACCGAAGTTACATCCAGTACGACCCCATATA
CGTGCCATCGTAGTGCCCTAGGCGCATCAATGACCCACATTTGGCCTCGATCGA
GACGTGGGGCACC GCCTATCGGGTCGATGCTGGGCGAAACGATGTATGGACAGTTG
TTGGCGGTACCTCGATAGTGACAGCATAAGTGAAAGTCACAAAAGCCAGAAGGGA
GAAACCAAAGAAGATCTCAAGTAGCCCATGTTTGTGAAATTTATATGTGGACA
AATTATTTTTTGGTACTTTATATATAGGGATATGGCGGCTTTTGGCACTACGGATA
TTAATCGTATTATATAACAATATCATACTTTGACTAATTATAAACGAAATATATT
ACAATATGATTTGGTAAACGTTGAGGTGAAAAATGTATAAGAGCCGCCTAATAA
TTAATTATTTTATGAATATAGCCTATAGTTACAAGTTAACTTTATTTGGTGATAA
CTTTGACATATAAACTCTGTAACGTGACGGAATTTTTCTTAAACTAAATATTAA
AAAGCAGCTATTTTCAGATTTTTTCGTGGCCAAAGTCTCTTGACATACTTATCTATG
CCCATTTTTACTTTTATCGTTCTAGCCTTCTAGGTACACGTTTGAACATAAAAAA
TCATAAAAATTGAAAGTAAAAATTAGTTTTTTTTTTTCATATTACTCGTATGGAT
CATTTGTAGATCAATCTGAAATATACAAACCATTCTGATTTTAAAATCACAACC
ATTCTGCCTAATGGGGAAGTCTATGTGATTTCGTGGCAAGTGTTTGATTATTCTTA
GTCTAGATTGGAGTCACAACTTTTAGTGCAAATATCTATTTAAAGAACCCCTATT
GATGCAAATATCTATTTAAAGAACCCCTATTCTACTTTATTTATTTTACGATC
GGAGCATGGATATATTTACTAATTAAAATAAATTGGGAGGAATTGATCGACAAGC
CATCAAGCTTATCGTCGATCCACATTAGGATAACGTTAGTATGGCTGTTTTTAGA
GAAACAAGTGGATCATGTACAATTGAGTTAAAAAATATCTCCTATAAATACCTGT
CTATCCCTCTTAAACCAAATACATCTAACACACAAAATATAAACTTAGATTCCTT
AAAGAAATTGCAGAATTAAATGAGGCAAATAAGTCTATGGTGAAGTTGGTTGCT
TTC

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Figure 3

Isoform III of Pin1 Gene Promoter

ATCTTTGTTTGAAAAAATTGGAAAAGAACGTAGGACCACATGGACCTTGGGTGCA
ACAATATTGTTGTCCTCCAAATGTGGTACAAGGATTGTTACATCCTCCGGGTACT
TTAAGCTGACTAGGACATTCACCATTTATATTTGCCGTGCATTGAATTGCGTGGC
ATTTCCCTCCACTTGATTAGTCGGGGCGAAAGTCATCGGTATATTAAATCCATC
AACTAAAGAAATGTCCCAGAAATCTAAGTTGTTGAACTGGTCCGAGGCGTACTCG
GCTAGGGTGTTTGGCGGTTTACCCACCCGGTGCACTGCAGGACACCACCACAAT
CACCAGTCATGCACGAACCTCTACCAGCACCATCGAAGTTACATCCAGTACGACC
CCATATACGTGCCATCGTAGTGCCCCTAGGCGCATCAATGACCCACGTTTGGCCT
CGATCGAGACGTGGGCCACCGCCTATCGGGGTGATGCTGCCAGACGGTGTATG
GACAGTTGTTGCGTACCTCGATAGTGGCAGCATAAGTGAAAGTCACAAAAGCAAG
AAGGGAGAAAACAAAAGAAGATCTCAAGTAGCCCATGTTTGTGAAATTTATATG
TGGACAAATTATTTTTGGTACTTTATATATAGGGATATGGCGGCTTTTGGCACTA
TGGATATTAATCGTATTATATAACAATATCATACTTTGACTAATTATAAACAAAT
AATATTACAATATGATTTGCTTAAAGCTTACGCTGGCTAAATCTTATAGAGGGGCC
TAATAATTAATTATTTTATGAATATAGACTATAGTTACAAGTGAACTTTATTTGG
TGATAACTTGGACATATAAACTCTGTATCGTGACGGAACTTTCTTAAAACTAAA
TATTAAAAAGCAGCTATTTTAAATATTTTCGTGGCCAAAGTTTCTTGCACTACTTA
TCTATGCCCATTTTTACTTTTATCGTTCTAGCCTTCTAGGTACGCGTTTGAACAT
AAAAAATCATAAAAATTGAAAGTAAAAATTAGTTTTTTTTCATATTACTCGTATG
GATCATTGTTAGATCAATGTGAAATATACAAATCATTCTGATTTTAAATCATA
ACTATTCTGCATGATGGGAACGTCTATGGTGATTCTGTGACAAGTGTTTGATTTAT
TCTAAGTCTGGATTGGAGTCACAACTTTTAGTGCAAATATCTATTAAAGAACCC
CTATTTGATGCAAAAGTCAATAAATATTTAATATCATCTTTTATTATTTTTACG
ATCGGAGCATGGATACATTTACTAATTAATAAATAAATTGGAAGGAATTGATCGACA
AGTCATCAAGCTTATCGTCGATCCACATTAAATAACGTTAGTATGGCTGCTTTT
AGAGAAACAAGTGGATCATGTATAATTTAGTTTTTAAATATCTCCTATAAATATC
TATATATACCTCTAAACTAAATGCATCTAACAACACAAATATAAACTTAGATTC
TTTAAAGAAATTGCAGAATTAAATGAGGCAATAAGTCTATGGTGAAGTTGGTT
GCTTTC-3-end

Figure 4

Isoform I of Amt Gene Promoter

[illegible]

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Isoform II of Amt Gene Promoter

ACTATAGGGCACGCGTGGTCGACGGCCCCGGGCTGGTCTGATTTAGGAGTATTTCATTCAATCAATT
TTATAAGAATTTACAGTCTGCACTCTGGAGACACTCTTATTTTCATAATGTAATTGCGTAATTGG
GGAAGTGAGGTTTTCTTGAGGCGCTTTTCTAGTGTTTTTAACCTTCATTTTGTGCTATCATAGTTACT
TGTTTTTCGTTAAGGTAAGATTTTTATTGACGTATATGGGAAATTCCTTGTAAGAGCTGACACGGTA
AACTGGACCTAAATAAATTTAGAAATGCAAGGCGCTTTAAGGATGTTTGGATCGTCTTATTTTT
AAGTAGTTTTGAACTTTTAAGCACTTTTTTTTTTTTTTTTGCAGCTCTCTGGGAAATGCAATATCTTT
TTAAACACTTATTATTAGGCCAAAAAGTATAAAAAATAAACTAAAAGCTAAAAGTTGGGTATGCCCG
ACTTATGATTTTTTAACTTTTAGCTTACAAGCTACTTAAAGAAAGCCAATCTAAACGACTTGTTCCT
AGGTGTAAGATTTTGAAGACTAAGCAAATTTCTTTCCATGAAACAACATTGTTTTTGTTTAGCGAT
ATGCCATTAAGTCGTTTATGTTCTAATTAATCTGGTTTTTGTAGGCTGGTTTCCATGCAAAACGTAT
TCCAGCAGTTAGCAGTTTACAGGAGCATATAGTTAAATCAACACCGGCAAGATATAGTAGTACACA
GGCATGTTTTGGAAAAATGACATTTCTGGAACTGATAATAAAGGGTAATTTCTGTTTTACTTTTCTTAC
CACTGGATCTCTTTTTTTGCATTCTTGTGTTTATGGACAGTCATTGCTAAATGACATGGCATTTTATT
CATGAGTATTACTCGTCATATGTGGAATATACTTCACTCATTGTGACATAAAAGCTGCACGTACAAG
CGTAAGAAGAATTTTACTAAAACAATGTATCTCCACTTTTGCAGGTTCAAGGGTCATGATATGTTG
GCACCCTTCACTGCTGGGTGGCAAAGTACTGATGTGGATCCTTTAATTATAGAGAAGTCTGAGGTT
AGATTTATGTCTACTTTTGTCTTAACCTTAAGAGAAGTTTATATATCTTTTCGTGATCAACTTTTA
CATTTTCGACATAGGGATCCACGTATATGACATGCAAGGGAGGAAGTATCTTGATACTCTAGCTGG

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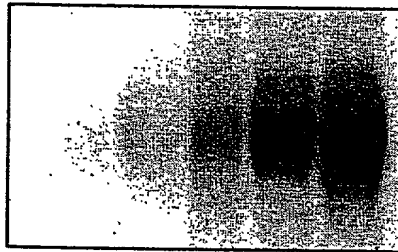


Figure 6

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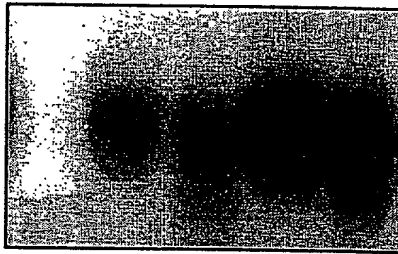


Figure 7

PIN1

Putative identity: Potato ethylene responsive proteinase inhibitor 1 (ER1) mRNA

cDNA Sequence

ACCAGCTTAGATTCTTTAAAGAAATTGCAGAATTAAAGAGGCAAATAAGTCTATGGTGAAGTTGGTTGC
TTTCTTGATAATTTTTCATCATGCTTTCAATCTCTCACTGCTCAAGATTGGAAATCGAAGTTAGTGATG
GCTTAAATGTCTTGCAACTACATGATGTGTCTCAGTCATTTTGTCCAGGTGTGACGAAAGAAAGTTGGCCA
GAACTTCTAGGGACACCAGCTAAGTTTGCAAAGCAAATAATTGAGAAGGAAAATCCAAAATTAACAAATGT
TGAAACTCTACTGAATGGTTCTGCTTTTACAGAAGATTTGAGATGCAATAGAGTTCGTCTTTTGTTAATT
TATTGGACATTGTTGTACAACTCCCAAAGTTGGTACAAAATTAATTCATGTTATATATATGTATCTA
GCCTCCAGAAAAATAAATTGGAGTTGTAATATGGTTAATGCTTCCACTATATTTGGTGATAAATAAACGTG
GCTTTTAAATATTAAAAA

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Figure 9

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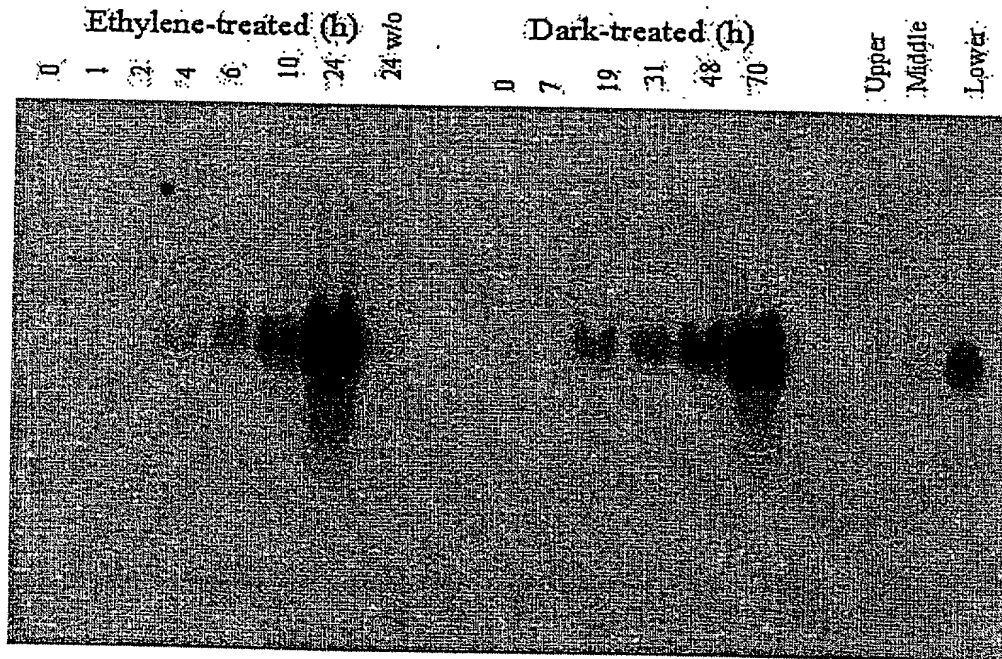


Figure 10

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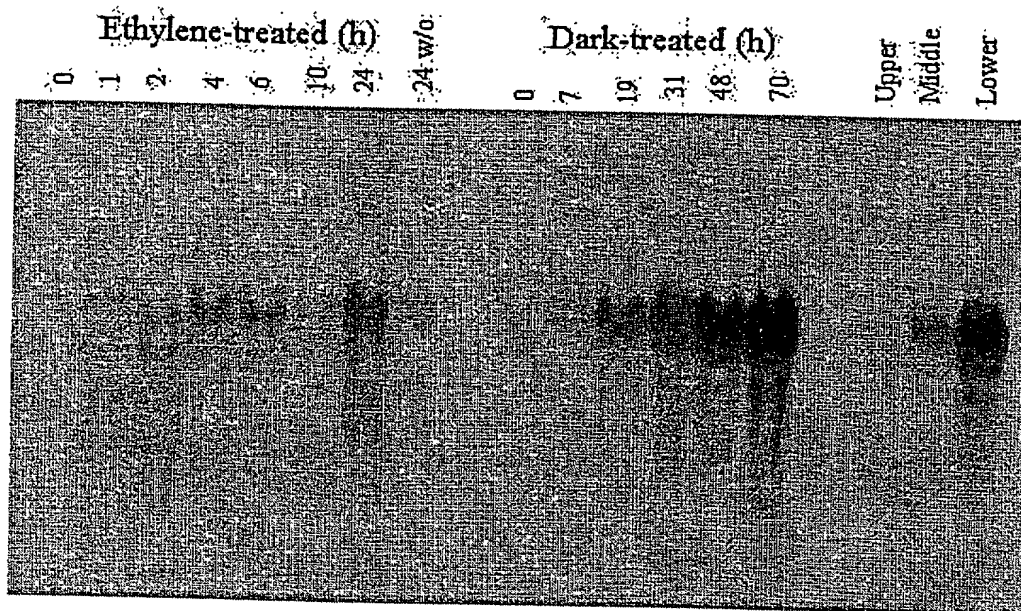


Figure 11